

STEP 3 Determine the y -intercept of $f(x)$.

y -intercepts of functions occur where the domain or input value $x = 0$.
From the table, the y -intercept of $f(x)$ is $(0, -5)$.

The domain of $f(x)$ is $(-\infty, \infty)$. The range of $f(x)$ is $(-\infty, \infty)$. The x -intercept of $f(x)$ is $(7.5, 0)$. The y -intercept of $f(x)$ is $(0, -5)$.



YOU TRY IT! #3

Identify the domain, range, x -intercept and y -intercept of the linear function described by the equation and table shown below. Write the domain and range as intervals.

$$f(x) = \frac{1}{2}(5x - 1)$$

x	y
-3	-8
-1	-3
1	2
3	7
5	12



PRACTICE/HOMEWORK

For questions 1 - 8, describe the transformation of the linear parent function, $f(x) = x$ that will result in the graph of the linear function given.

1. $h(x) = (4x - 1)$

2. $g(x) = -2(x) + 5$

3. $h(x) = 3(x + 2)$

4. $g(x) = (-\frac{1}{2}x + 3) + 7$

5. $h(x) = -\frac{3}{4}(x - 8) + 2$

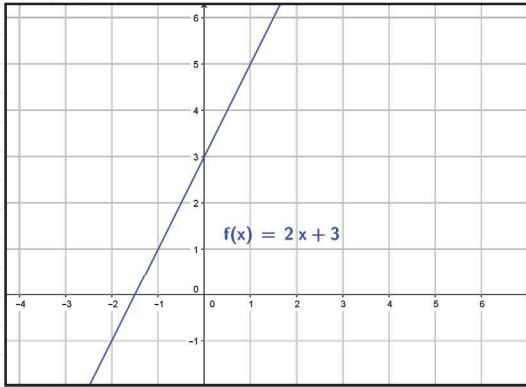
6. $g(x) = \frac{2}{3}(6x + 1) - 3$

7. $h(x) = -4(\frac{1}{2}x - 3) + 4$

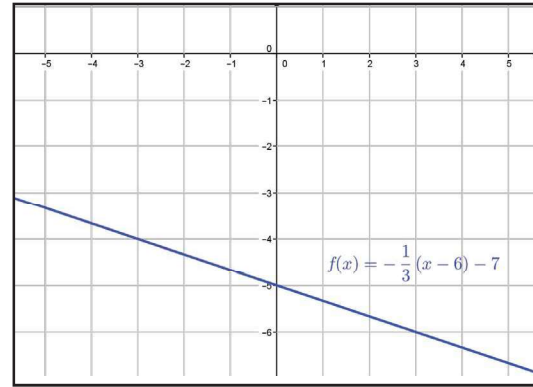
8. $g(x) = -(-8x + 9) - 6$

For questions 9 - 12, identify the domain, range, x -intercept, and y -intercept of the linear function described by the equation and the graph. Write the domain and range as inequalities.

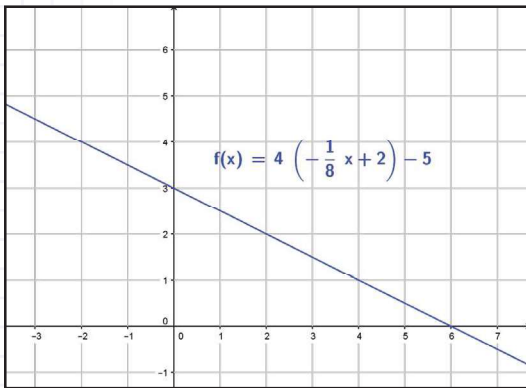
9. $f(x) = (2x + 3)$



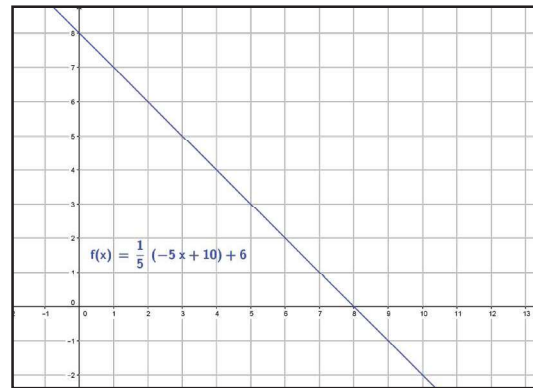
10. $f(x) = -\frac{1}{3}(x - 6) - 7$



11. $f(x) = 4(-\frac{1}{8}x + 2) - 5$

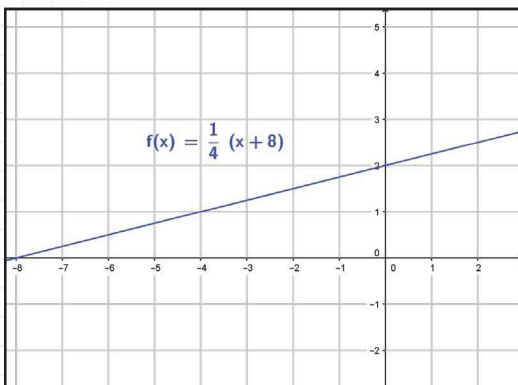


12. $f(x) = \frac{1}{5}(-5x + 10) + 6$

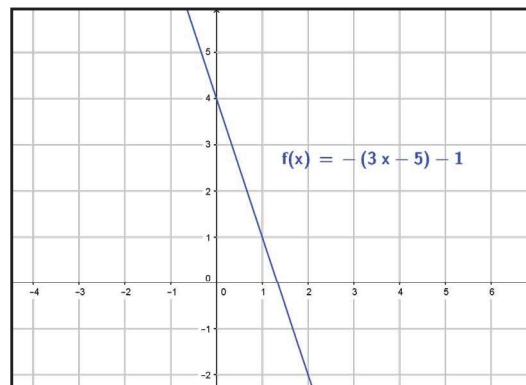


For questions 13 - 16, identify the domain, range, x -intercept, and y -intercept of the linear function described by the equation and the graph. Write the domain and range in set builder notation.

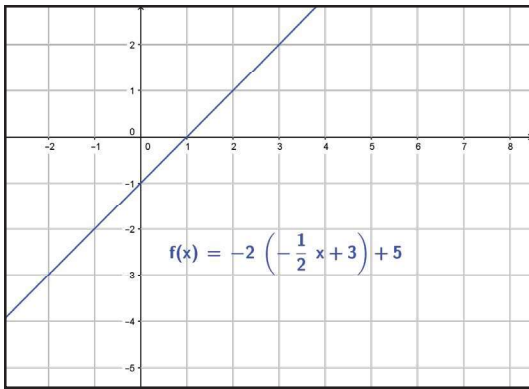
13. $f(x) = \frac{1}{4}(x + 8)$



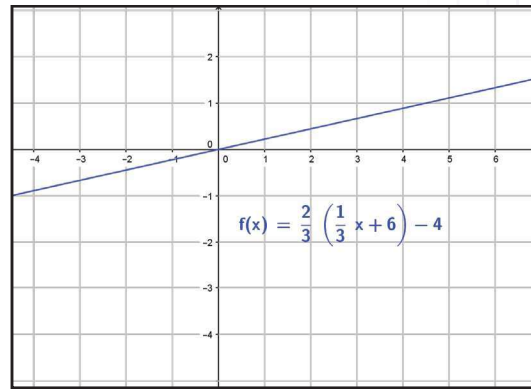
14. $f(x) = -(3x - 5) - 1$



15. $f(x) = -2\left(-\frac{1}{2}x + 3\right) + 5$



16. $f(x) = \frac{2}{3}\left(\frac{1}{3}x + 6\right) - 4$



For questions 17 - 20, identify the domain, range, x -intercept, and y -intercept of the linear function described by the equation and the table. Write the domain and range as intervals.

17. $f(x) = -\frac{2}{5}(x + 8)$

x	$f(x)$
-6	-0.8
-3	-2
2	-4
4	-4.8
7	-6

18. $f(x) = \frac{1}{2}(-6x - 3)$

x	$f(x)$
-4	10.5
-2	4.5
1	-4.5
3	-10.5
5	-16.5

19. $f(x) = -3(2x + 5) + 9$

x	$f(x)$
-5	24
-3	12
1	-12
2	-18
4	-30

20. $f(x) = -\frac{1}{3}\left(-\frac{1}{4}x - 9\right) - 5$

x	$f(x)$
-12	-3
-6	-2.5
-3	-2.25
3	-1.75
9	-1.25